MMSTA64-7-F Datasheet

https://www.DiGi-Electronics.com

DiGi Electronics Part Number	MMSTA64-7-F-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	MMSTA64-7-F
Description	TRANS PNP DARL 30V 0.5A SOT323
Detailed Description	Bipolar (BJT) Transistor PNP - Darlington 30 V 500 mA 125MHz 200 mW Surface Mount SOT-323

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
MMSTA64-7-F	Diodes Incorporated
Series:	Product Status:
-	Active
Transistor Type:	Current - Collector (Ic) (Max):
PNP - Darlington	500 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
30 V	1.5V @ 100µA, 100mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
100nA (ICBO)	20000 @ 100mA, 5V
Power - Max:	Frequency - Transition:
200 mW	125MHz
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
SC-70, SOT-323	SOT-323
Base Product Number:	
MMSTA64	

Environmental & Export classification

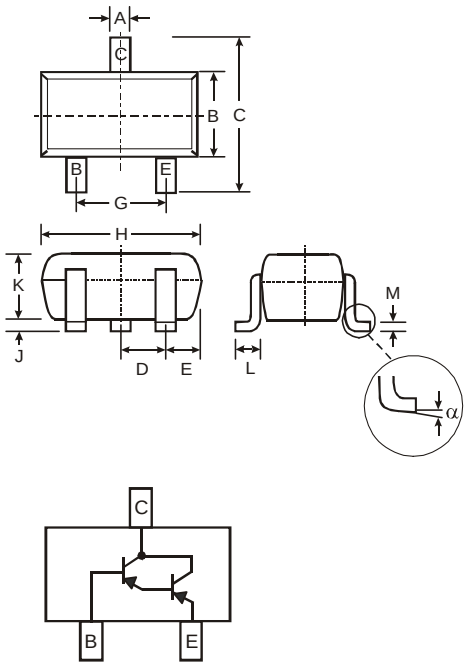
RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0075	

MMSTA63/MMSTA64

PNP SURFACE MOUNT DARLINGTON TRANSISTOR

Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (MMSTA13/MMSTA14)
- Ultra-Small Surface Mount Package
- Ideal for Medium Power Amplification and Switching
- High Current Gain
- **Lead Free/RoHS Compliant (Note 2)**
- **"Green" Device (Note 3 and 4)**



SOT-323		
Dim	**Min**	**Max**
A	0.25	0.40
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.18
α	0°	8°
All Dimensions in mm		

Mechanical Data

- Case: SOT-323
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- MMSTA63 Marking K2E, K3E, See Page 3
- MMSTA64 Marking K3E, See Page 3
- Ordering & Date Code Information: See Page 3
- Weight: 0.006 grams (approximate)

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-30	V
Collector-Emitter Voltage	V_{CEO}	-30	V
Emitter-Base Voltage	V_{EBO}	-10	V
Collector Current - Continuous	I_C	-500	mA
Power Dissipation (Note 1)	P_d	200	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	°C

Notes:
1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
2. No purposefully added lead.
3. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php
4. Product manufactured with Date Code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 5)					
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-30	—	V	I_C = -100μA V_{BE} = 0V
Collector Cutoff Current	I_{CBO}	—	-100	nA	V_{CB} = -30V, I_E = 0
Emitter Cutoff Current	I_{EBO}	—	-100	nA	V_{EB} = -10V, I_C = 0
ON CHARACTERISTICS (Note 5)					
DC Current Gain MMSTA63	h_{FE}	5,000	—	—	I_C = -10mA, V_{CE} = -5.0V
MMSTA64		10,000			I_C = -10mA, V_{CE} = -5.0V
MMSTA63		10,000			I_C = -100mA, V_{CE} = -5.0V
MMSTA64		20,000			I_C = -100mA, V_{CE} = -5.0V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	-1.5	V	I_C = -100mA, I_B = -100μA
Base- Emitter Saturation Voltage	$V_{BE(SAT)}$	—	-2.0	V	I_C = -100mA, V_{CE} = -5.0V
SMALL SIGNAL CHARACTERISTICS					
Current Gain-Bandwidth Product	f_T	125	—	MHz	V_{CE} = -5.0V, I_C = -10mA, f = 100MHz

Notes: 5. Short duration pulse test used to minimize self-heating effect.

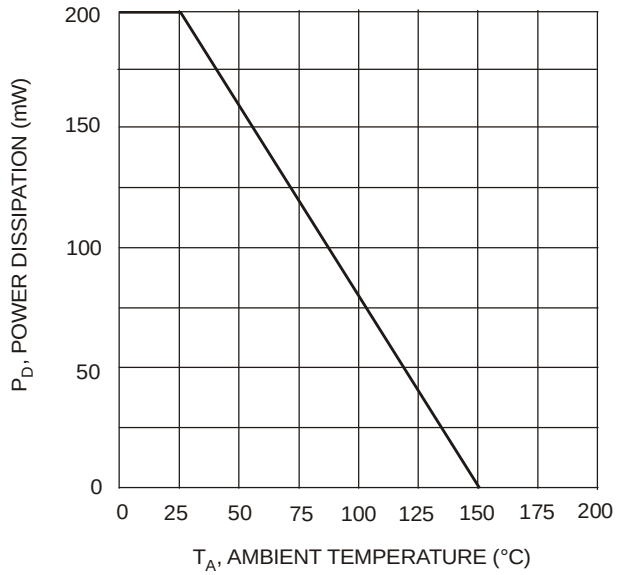


Fig. 1, Max Power Dissipation vs. Ambient Temperature

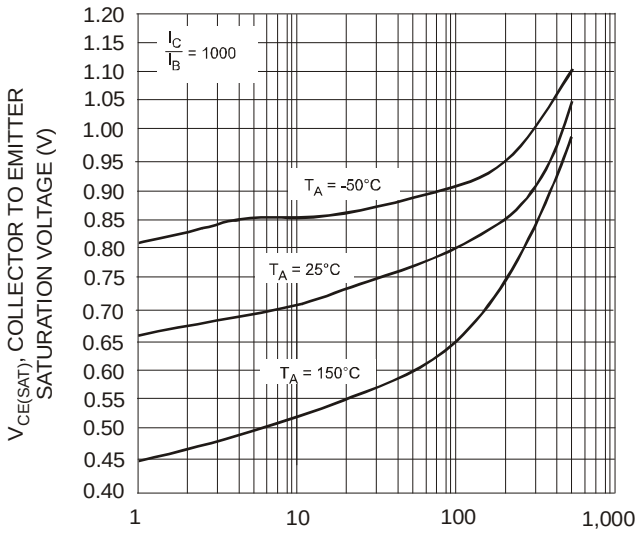


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

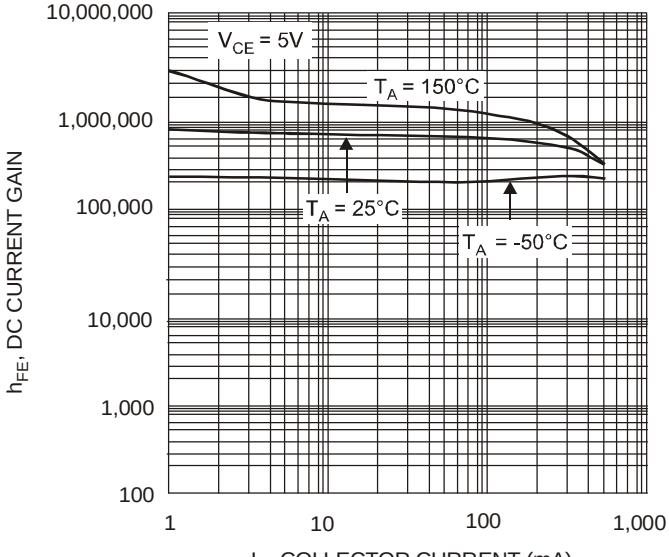


Fig. 3, DC Current Gain vs. Collector Current

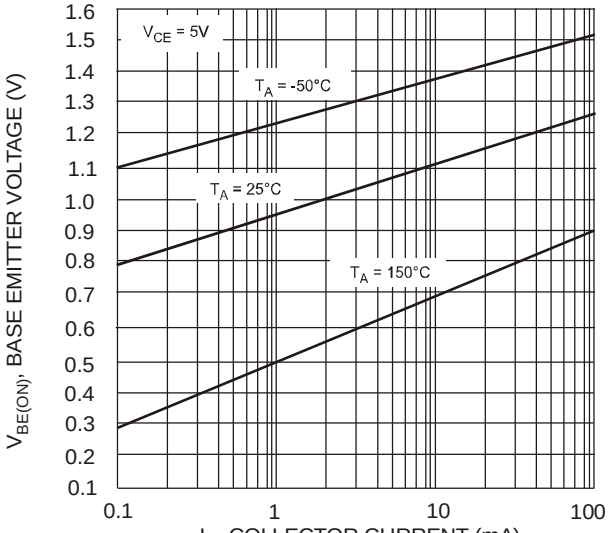


Fig. 4, Base Emitter Voltage vs. Collector Current

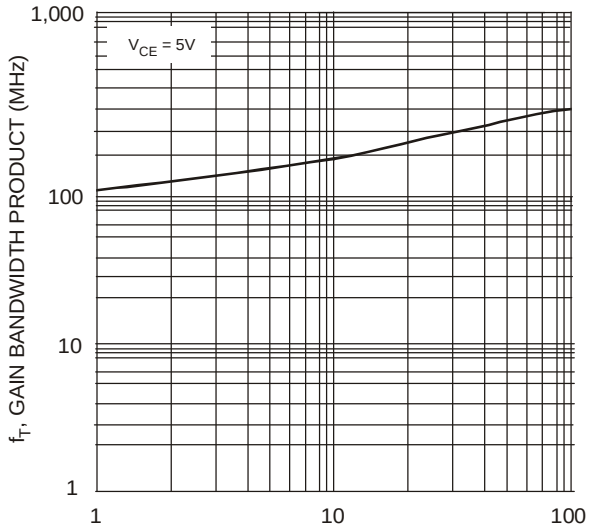


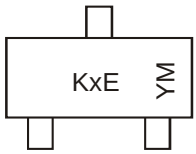
Fig. 5, Gain Bandwidth Product vs. Collector Current

Ordering Information (Note 4 & 6)

Device	Packaging	Shipping
MMSTA63-7-F	SOT-323	3000/Tape & Reel
MMSTA64-7-F	SOT-323	3000/Tape & Reel

Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



KxE = Product Type Marking Code, e.g. K2E = MMSTA63
YM = Date Code Marking
Y = Year ex: N = 2002
M = Month ex: 9 = September

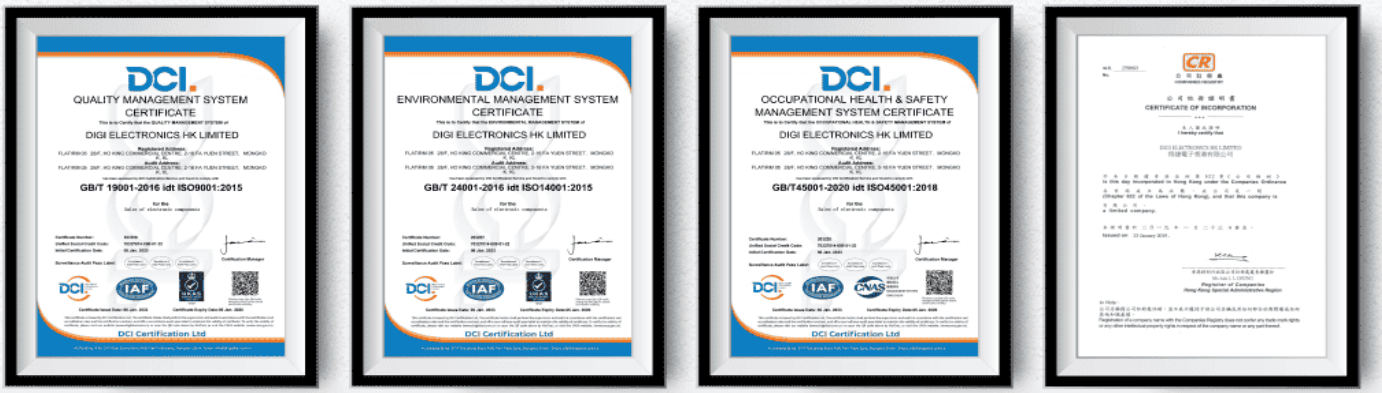
Date Code Key

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	J	K	L	M	N	P	R	S	T	U	V	W	X	Y	Z

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we striciy control the quality of products and services. Welcome your RFQ to Email: Info@DiGi-Electronics.com



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.